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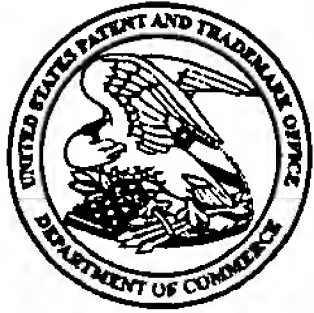
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# BEFORE THE BOARD OF PATENT APPEALS
# AND INTERFERENCES

Paper No. 14

Application Number: 09/742,809
Filing Date: December 19, 2000
Appellant(s): FAISAL, MOHAMMAD

John C. Stattler
For Appellant

## EXAMINER'S ANSWER

This is in response to the appeal brief filed April 23, 2004.

*(1)* **Real Party in Interest**

A statement identifying the real party in interest is contained in the brief.

*(2)* **Related Appeals and Interferences**

A statement identifying the related appeals and interferences which will directly affect or

be directly affected by or have a bearing on the decision in the pending appeal is contained in the

brief.

*(3)* **Status of Claims**

The statement of the status of the claims contained in the brief is correct.

*(4)* **Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in

the brief is correct.

*(5)* **Summary of Invention**

The summary of invention contained in the brief is correct.

*(6)* **Issues**

The appellant's statement of the issues in the brief is correct.

*(7)* **Grouping of Claims**

Appellant's brief includes a statement that claims 1-15 stand or fall together.

Accordingly, appellants are not grouping the claims on appeal.

*(8)* **Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

*(9)      Prior Art of Record*

5,930,788                    Wical                    7-1999

*(10)     Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

### *Claim Rejections - 35 USC § 102*

3.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.      Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Wical (U.S.

Patent No. 5,953,718).

As to claim 1, Wical discloses a method for generating cross-references among categories

in a knowledge base (See column 16, lines 54-57), said method comprising the steps of:

extracting, from a plurality of documents, a plurality of themes, wherein a theme

identifies subject matter contained in a corresponding document (See figure 3, shows "subject

matter" represented by "Theme Concept", also see column 7, lines 49-53);

generating a theme strength for said themes, said theme strength reflects the amount of

subject matter contained in a document for a corresponding theme relative to other themes in

said document (See column 6, lines 35-67, and column 7, lines 1-37, wherein "generating a

theme strength for said themes" reads on "reassigns theme strengths based on the contextual

relationship among theme identified for the document", and wherein "theme strength reflects the

amount of subject matter contained in a document" reads on " each theme has a corresponding

theme strength is a relative measure of the importance of the theme to the overall content of the

document", also see table 1, column 7, lines 15-26, shows "relative to other themes in said

document" is represented by "theme strength column" listing the document themes from the

most important to the least important themes);

generating a plurality of scores (See figure 2, 310), from said theme strengths (See

column 6, lines 35-67, and column 7, lines 1-37, wherein "generating a theme strength for said

themes" reads on "reassigns theme strengths based on the contextual relationship among theme

identified for the document"), to identify a relative theme pair strength (See figure 2, 320, also

see column 7, lines 15-25, Table 1, shows "Theme Strength", also see column 7, lines 28-37,

wherein the theme measure is defined as the relative measure of the importance of the theme to

the overall content of the document in comparison with another theme present) for at least one

pair of said themes extracted from said documents (See column 4, line 6, also see column 7, lines

58-67, wherein "for at least one pair" reads on "based on the number of query

terms...theme...relevant themes in the corresponding document" indicating comparison between

more than one theme);

selecting theme pairs based on said scores (See column 7, lines 56-58);

selecting category pairs in said knowledge base (See column 4, lines 40-60, and also see

column 23, lines 46-48) by mapping said themes of said theme pairs selected to corresponding

categories of said knowledge base (See column 4, lines 65-66, also see column 22, lines 49-52);

and

generating a cross reference in said knowledge base between categories of said category

pairs (See column 16, lines 54-57, also see column 8, lines 49-67), wherein said cross reference

identifies an association between said category pairs (See column 4, lines 26-28, also see column

8, lines 49-67).

As to claim 2, <u>Wical</u> discloses the method as set forth in claim 1, wherein the step of

generating a plurality of scores (See column 6, lines 32-33) comprises the steps of:

generating a matrix comprising a plurality of columns and rows to form a plurality of

entries, wherein each column represents one of said themes and each row represents one of said

themes (See figure 3, wherein "column represents one of said themes" reads on "Documents

contains theme", and see column 3, lines 49-67); and

generating a score for at least a subset of said entries of said matrix (See column 6, lines

32-34), such that a score reflects a relative theme pair strength between two themes represented

by said entry for said documents (See column 7, lines 15-25, Table 1, shows "Theme Strength",

also see column 7, lines 58-67, wherein "theme pair strength" reads on "total theme weight for

the relevant themes in the corresponding document" indicating more than one theme is being

compared).

As to claim 3, <u>Wical</u> discloses the method as set forth in claim 2, wherein

the step of generating a score (See column 6, lines 32-34) for at least a subset of said

entries of said matrix (See figure 3, wherein "column represents one of said themes" reads on

"Documents contains theme", and wherein "score" reads on cumulative No. of "X"'s, also see

column 9, lines 63-67, and see column 14, lines 24-53, wherein "score" reads on "importance number") comprises the steps of:

calculating a plurality of products for an entry by multiplying theme strengths (See column 11, lines 5-15, table 4, shows "Total Theme Weight") corresponding to two themes represented by said entry (See column 11, lines 5-15, table 4, shows # of Query Terms) for each document (See column 11, lines 5-15, table 4, shows "Document100") that includes said two themes represented by said entry (See column 7, lines 17-45, wherein "two themes" reads on "theme concept" or "theme term"); and

summing said products for an entry to generate said score (See column 11, lines 33-34, and column 11, lines, 5-15, table 4, shows Total Score).


As to claim 4, <u>Wical</u> discloses the method as set forth in claim 1, wherein the step of selecting category pairs in said knowledge base (See column 22, lines 49-52) comprises the steps of:

determining whether only one of said themes exist as a category in said knowledge base (See column 7, lines 38-40, also see column 23, lines 46-48);

if so,

generating a new category in said knowledge base for said theme (See column 24, lines 1-4);

generating a new cross-reference relationship between said new category and a category for which one of said themes exist (See column 24, lines 4-6, wherein "category ...exist" reads on "pre-defined categories"); and generating a new score for said new cross-reference

relationship (See figure 5, 450, wherein "new score" reads on "strongest themes", also see column 9, lines 8-9).

As to claim 5, <u>Wical</u> discloses the method as set forth in claim 1, wherein the step of selecting category pairs in said knowledge base (See column 22, lines 49-52) comprises the steps of:

determining whether both of said themes exist as categories in said knowledge base (See column 23, lines 46-48, also see column 7, lines 38-40); if so,

determining whether a cross reference relationship exists from said category pair (See column 17, lines 16-18, also see figure 6);

if not,

generating a new cross-reference relationship between said category pair (See column 17, lines 48-49, wherein "new cross-reference relationship" reads on "links is generated through processing documents", also see column 16, lines 4-18);

generating a new score for said new cross-reference relationship (See figure 5, 450, wherein "new score" reads on "strongest themes", also see column 9, lines 8-9); and if so,

generating a new score for said existing cross-reference relationship (See column 8, lines 58-60, wherein "existing cross-reference" reads on "Common theme and the additional theme").

As to claim 6, <u>Wical</u> discloses a system comprising:

search and retrieval module (See figure 1, search and retrieval system 100) for receiving

a user query (See figure 1, shows User Query Arrow) and for generating a query response (See

column 4, lines 2-4) including query feedback (See figure 1, shows Query Processing 165);

a knowledge base (See Figure 1, 155), coupled to said search and retrieval module (See

figure 1, shows "System 100" representing the entire system including the knowledge base, also

see figure 8, 1070, input control, 1060, output display, shows a representation of "search and

retrieval system"), for storing relationships among terminology for use as query feedback (See

column 3, lines 40-43);

a knowledge base processing system (See Figure 1, 165, "Learning Processing"), coupled

to said knowledge base (See Figure 1, 155, "Knowledge base") for processing a plurality of

documents and automatically extending said relationships among said terminology in said

knowledge base (See column 16, lines 54-56, also see column 9, lines 1-12), said knowledge

base processing system for extracting, from said documents, a plurality of themes (See figure 3,

shows "subject matter" represented by "Theme Concept", also see column 7, lines 49-53),

wherein a theme identifies subject matter contained in a corresponding document (See column 4,

lines 2-4), for generating a theme strength for said themes, said theme strength reflects the

amount of subject matter contained in a document for a corresponding theme relative to other

themes in said document (See column 6, lines 35-67, and column 7, lines 1-37, wherein

"generating a theme strength for said themes" reads on "reassigns theme strengths based on the

contextual relationship among theme identified for the document", and wherein "theme strength

reflects the amount of subject matter contained in a document" reads on " each theme has a

corresponding theme strength is a relative measure of the importance of the theme to the overall

content of the document", also see table 1, column 7, lines 15-26, shows "relative to other themes in said document" is represented by "theme strength column" listing the document themes from the most important to the least important themes);

for generating a plurality of scores (See figure 2, 310), from said theme strengths (See column 6, lines 35-67, and column 7, lines 1-37, wherein "generating a theme strength for said themes" reads on "reassigns theme strengths based on the contextual relationship among theme identified for the document"), to identify a relative theme pair strength for at least one pair of said themes extracted from said documents (See column 4, line 6, also see column 7, lines 58-67, wherein "for at least one pair" reads on "based on the number of query terms...theme...relevant themes in the corresponding document" indicating comparison between more than one theme), for selecting theme pairs based on said scores, for selecting category pairs in said knowledge base by mapping said themes of said theme pairs selected to corresponding categories of said knowledge base (See column 7, lines 38-40, also see column 22, lines 49-52), and for generating a cross reference in said knowledge base between categories of said category pairs (See column 16, lines 54-57), wherein said cross reference identifies an association between said category pairs (See column 17, lines 9-11).

As to claim 7, Wical discloses the system as set forth in claim 6, wherein the knowledge base processing system (See figure 1, search and retrieval system 100) further for generating a matrix comprising a plurality of columns and rows to form a plurality of entries, wherein each column represents one of said themes and each row represents one of said themes (See figure 3, wherein "column represents one of said themes" reads on "Documents contains theme", and

wherein "score" reads on cumulative No. of "X"'s, also see figure 8) and for generating a score

for at least a subset of said entries of said matrix (See column 7, lines 15-25, Table 1, shows

Theme Strength), such that a score reflects a relative theme pair strength between two themes

represented by said entry for said documents (See column 7, lines 15-25, Table 1, shows Theme

Strength, also see column 7, lines 58-67, wherein "theme pair strength" reads on "total theme

weight for the relevant themes in the corresponding document" indicating more than one theme

is being compared).


As to claim 8, <u>Wical</u> discloses the system as set forth in claim 7, wherein the knowledge

base processing system (See figure 1, search and retrieval system 100) further for calculating a

plurality of products for an entry by multiplying theme strengths (See column 11, lines 5-15,

table 4, shows Total Theme Weight) corresponding to two themes represented by said entry (See

column 11, lines 5-15, table 4, shows # of Query Terms) for each document (See column 11,

lines 5-15, table 4, shows Document100) that includes said two themes represented by said entry,

and for summing said products for an entry to generate said score (See column 11, lines 33-34,

and column 11, lines 5-15, table 4, shows Total Score).


As to claim 9, <u>Wical</u> discloses the system as set forth in claim 7, wherein the knowledge

base processing system (See figure 1, search and retrieval system 100) further for determining

whether only one of said themes exist as a category in said knowledge base (See column 7, lines

38-40, also see column 23, lines 46-48), if so, for generating a new category in said knowledge

base for said theme (See column 24, lines 1-4), for generating a new cross-reference relationship

between said new category and a category for which one of said themes exist (See column 24, lines 4-6, wherein "category ...exist" reads on "pre-defined categories"), and for generating a new score for said new cross-reference relationship (See figure 5, List themes in order of strongest theme 450, wherein "new score" reads on "strongest themes", also see column 9, lines 8-9).

As to claim 10, Wical discloses the system as set forth in claim 7, wherein the knowledge base processing system further for determining whether both of said themes exist as categories in said knowledge base (See column 23, lines 46-48); if so, for determining whether a cross reference relationship exists from said category pair (See column 17, lines 16-18, also see figure 6); if not, for generating a new cross-reference relationship between said category pair (See column 17, lines 48-49, wherein "new cross-reference relationship" reads on "links is generated through processing documents"), for generating a new score for said new cross-reference relationship (See figure 5, List themes in order of strongest theme 450, wherein "new score" reads on "strongest themes", also see column 9, lines 8-9); and if so, for generating a new score for said existing cross-reference relationship (See column 8, lines 58-60, wherein "existing cross-reference" reads on "Common theme and the additional theme").

As to claim 11, Wical discloses a computer readable medium (See figure 11) comprising a plurality of instructions (See column 24, lines 14-15), which when executed, causes the computer to perform the steps of:

extracting, from a plurality of documents, a plurality of themes, wherein a theme

identifies subject matter contained in a corresponding document (See figure 2, 300);

generating a theme strength for said themes, said theme strength reflects the amount of

subject matter contained in a document for a corresponding theme relative to other themes in

said document (See column 6, lines 35-67, and column 7, lines 1-37, wherein "generating a

theme strength for said themes" reads on "reassigns theme strengths based on the contextual

relationship among theme identified for the document", and wherein "theme strength reflects the

amount of subject matter contained in a document" reads on " each theme has a corresponding

theme strength is a relative measure of the importance of the theme to the overall content of the

document", also see table 1, column 7, lines 15-26, shows "relative to other themes in said

document" is represented by "theme strength column" listing the document themes from the

most important to the least important themes);

generating a plurality of scores ( See figure 2, 310), from said theme strengths (See

column 6, lines 35-67, and column 7, lines 1-37, wherein "generating a theme strength for said

themes" reads on "reassigns theme strengths based on the contextual relationship among theme

identified for the document") to identify a relative theme pair strength (See figure 2, 320, also

see column 7, lines 15-25, Table 1, shows Theme Strength, also see column 7, lines 28-37,

wherein the theme measure is defined as the relative measure of the importance of the theme to

the overall content of the document in comparison with another theme present) for at least one

pair of said themes extracted from said documents (See column 4, line 6, also see column 7, lines

58-67, wherein "for at least one pair" reads on "based on the number of query

terms…theme…relevant themes in the corresponding document" indicating comparison between

more than one theme);

selecting theme pairs based on said scores (See column 7, lines 32-34);

selecting category pairs in said knowledge base ( See column 4, line 46, and also see

column 23, lines 46-48) by mapping said themes of said theme pairs selected to corresponding

categories of said knowledge base (See column 4, lines 65-66, also see column 22, lines 49-52);

and

generating a cross reference in said knowledge base between categories of said category

pairs (See column 16, lines 54-57), wherein said cross reference identifies an association

between said category pairs (See column 4, lines 26-28).


As to claim 12, <u>Wical</u> discloses the computer readable medium (See figure 11) as set

forth in claim 11, wherein the step of generating a plurality of scores (See column 6, lines 32-33)

comprises the steps of:

generating a matrix comprising a plurality of columns and rows to form a plurality of

entries, wherein each column represents one of said themes and each row represents one of said

themes (See figure 3, wherein "column represents one of said themes" reads on "Documents

contains theme", and figure 8); and

generating a score for at least a subset of said entries of said matrix (See column 6, lines

32-34), such that a score reflects a relative theme pair strength between two themes represented

by said entry for said documents (See column 7, lines 15-25, Table 1, shows Theme Strength,

also see column 7, lines 58-67, wherein "theme pair strength" reads on "total theme weight for

the relevant themes in the corresponding document" indicating more than one theme is being

compared).

As to claim 13, <u>Wical</u> discloses the computer readable medium (See figure 11) as set

forth in claim 12, wherein

the step of generating a score (See column 6, lines 32-34) for at least a subset of said

entries of said matrix (See figure 3, wherein "column represents one of said themes" reads on

"Documents contains theme", and wherein "score" reads on cumulative No. of "X"'s, also see

figure 8) comprises the steps of:

calculating a plurality of products for an entry by multiplying theme strengths (See

column 11, lines 5-15, table 4, shows Total Theme Weight) corresponding to two themes

represented by said entry (See column 11, lines 5-15, table 4, shows # of Query Terms) for each

document (See column 11, Table 4, document100) that includes said two themes represented by

said entry; and

summing said products for an entry to generate said score (See column 11, lines 33-34,

and column 11, lines 5-15, table 4, shows Total Score).

As to claim 14, <u>Wical</u> discloses the computer readable medium (See figure 11) as set

forth in claim 11, wherein the step of selecting category pairs in said knowledge base (See

column 22, lines 49-52) comprises the steps of:

determining whether only one of said themes exist as a category in said knowledge base

(See column 7, lines 38-40, also see column 23, lines 46-48);

if so,

generating a new category in said knowledge base for said theme (See column 24, lines
1-4, also see column 15, lines 47-52);

generating a new cross-reference relationship between said new category and a category

for which one of said themes exist (See column 24, lines 4-6, wherein "category ...exist" reads

on "pre-defined categories", and see column 16, lines 5-15); and

generating a new score for said new cross-reference relationship (See column 12, lines

12-40, wherein the disambiguation processes generates a theme strength according to the newly

edited theme, also see column 9, lines 6-8, wherein "new score" reads on "permutations"

indicating the process continues to validate theme categories to achieve accurate retrieval

results).

As to claim 15, Wical discloses the computer readable medium (See figure 11) as set

forth in claim 11, wherein the step of selecting category pairs in said knowledge base (See

column 22, lines 49-52) comprises the steps of:

determining whether both of said themes exist as categories in said knowledge base (See

column 23, lines 46-48, also see column 7, lines 38-40);

if so,

determining whether a cross reference relationship exists from said category pair (See

column 17, lines 16-18, also see figure 6);

if not,

generating a new cross-reference relationship between said category pair (See column 17,

lines 48-49, wherein "new cross-reference relationship" reads on "links is generated through

processing documents");

generating a new score for said new cross-reference relationship ((See column 12, lines

12-40, wherein the disambiguation processes generates a theme strength according to the newly

edited theme, also see column 9, lines 6-8, wherein "new score" reads on "permutations"

indicating the process continues to validate theme categories to achieve accurate retrieval results

(See column 12, lines 12-40, wherein the disambiguation processes generates a theme strength

according to the newly edited theme, also see column 9, lines 6-8, wherein "new score" reads on

"permutations" indicating the process continues to validate theme categories to achieve accurate

retrieval results); and

if so,

generating a new score for said existing cross-reference relationship (See column 8, lines

58-60, wherein "existing cross-reference" reads on "Common theme and the additional theme").


*(11)    Response to Argument*


1.    **The '788 Patent Does Not Disclose the Claimed Invention of The Subject**

**Application argument.**


Firstly, appellant argues (Answer, page 6) '788 Patent is not related to generating cross-

references between category pairs.

In response, the examiner maintains that <u>Wical</u> teaches category pairs in a category cross-reference database as acknowledged by the appellant. In teaching using category pairs, from a category cross-reference database in column 2, lines 12-29, <u>Wical</u> has inherently disclosed the fact that category cross-reference pairs have been generated and stored in the system. <u>Wical</u> goes further to teach in figure 1, disambiguation process 160 that utilizes the knowledge base 155, and the category cross reference database (including category pairs classification in column 2, lines 12-29) to rank query responses, also see <u>Wical</u> column 4, lines 41-60.

The appellant argues that '788 only disclose "using" category pairs, from a category cross-reference database in the disambiguation process (column 8, lines 34-36, cited by the examiner).

The Examiner maintains that the disambiguation process 160 is part of to the entire knowledge system knowledgebase figure 1, 100. Therefore, since the disambiguation process 160 is part of the entire knowledge system, the generation of the cross-reference categories in the database 155; is too part of the <u>Wical</u> system. How could the "category pairs" exist in the database without them being created or generated?

To what end or how these category cross references pairs are being used is separate matter than the fact they have been generated and reside in the database as a part of the system.

In fact by stating in column 2, lines 20-29 "the disambiguation processing also compares the document category pairs with category cross reference database pairs", <u>Wical</u> has gone further to extend the "generating" process to teaching methods for "using" the existing category pairs.

Wical in column 4, lines 6-28, teaches the content processing system dynamically

generates categories based on the contextual use of the term for which the categories are being

generated; and further teaches dynamically linking categories based on terminology contained in

the documents results in generation of a knowledge base. In conclusion, The Examiner finds the

argument not to be persuasive.

**2.      The '788 Patent Does Not Disclose Generating Relative Theme Pair Strengths For a**

**Pair of Themes argument.**

Secondly, appellant argues (Answer, page 7) '788 Patent does not disclose generating

relative theme pair strengths for a pair of themes.

In response, examiner maintains that Wical teaches 10 column 14, lines 24-40 assigning

each theme term, including words and phrases, a relative strength then linking each theme term

to another by categories in the knowledge base. The theme term indicating more than one theme

can include a theme pair or a theme concept or linked theme, and then collective theme strength

can be calculated. In column 9, lines 62-67, and column 10, lines 1-17, Wical teaches the

disambiguation process sums the theme weights of document themes for comparison against a

theme weight for another document theme that is also the theme concept for the first themes,

indicating to The Examiner that relative theme pair strengths for a pair of themes is being

generated.

The appellant argues that '788 only disclose "ascribing a weight to a single theme term" particularly, the disambiguation process compares the theme weights of two terms to select a category (column 9, lines 14-48, cited by the examiner).

The Examiner maintains that <u>Wical</u> in columns 8-9, initially teaches the disambiguation processing 160 compares all combinations of parent theme concept pairs to category pairs of the category cross reference database and further generates pairs from all combinations of theme concepts. The, <u>Wical</u> in column 9, lines 14-48, further teaches how the comparison is validated. Ascribing a weight to a single theme or theme term or a theme concept, which can be made up from more than one theme (See <u>Wical</u>, Table 2, Theme Concept), validates the comparison.

The fact that from the single theme; a theme category pair is created to be stored in the category pair database is sufficient enough to see that the theme weights are summed up (calculated), compared, and presented as a combined theme pair relative strength, as taught in <u>Wical</u> column 20, lines 59-67 (Claim 12). Summing (calculating) all theme strengths for all themes classified under the parent category (which can contain a pair of themes only) indicates that the weights (scores) have been ascribed to each themes that is linked together and stored as a cross reference pair in the database.

Also <u>Wical</u> in column 14, lines 8-35 teaches the theme vector processor 750 generates a list of theme terms, including words and phrases, and assigns a relative theme strength to each theme term; in addition, the theme vector processor 750 generates, for each term, an importance number, a theme strength, and an overall capacity weight of collective content importance indicating to The Examiner that '788 Patent does teach generating relative theme pair strengths for a pair of themes.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Neveen Abel-Jalil
July 22, 2004

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